

ABSTRACT OF THE DISCLOSURE

A gate insulating film is formed in a partial area of the surface of a semiconductor substrate, and on this gate insulating film, a gate electrode is formed. An ONO film is formed on the side wall of the gate electrode and on
5 the surface of the semiconductor substrate on both sides of the gate electrode, conformable to the side wall and the surface. A silicon nitride film of the ONO film traps carriers. A conductive side wall spacer faces the side wall of the gate electrode and the surface of the semiconductor substrate via the ONO film. A
10 conductive connection member electrically connects the side wall spacer and gate electrode. Source and drain regions are formed in the surface layer of the semiconductor substrate in areas sandwiching the gate electrode. A semiconductor device is provided which can store data of two bits in one memory cell and can be driven at a low voltage.